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RESEARCH PAPER

Evaluating the Challenges and Barriers in S-D logic adoption in the Public Sector organization: The Case of Pakistan Railways

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ABSTRACT

This research looks into the issues and impediments of the implementation of Service-Dominant (S-D) Logic in Pakistan Railways from the point of view of customers, employees, and suppliers to reflect a whole supply chain view. S-D Logic shifts the focus from goods and transactions to service and value co-creation. Although Pakistan Railways operates as a traditional Logistics Service Provider (LSP), structural, cultural, and operational barriers limit its ability to implement S-D Logic. A qualitative case study design was utilized based on indepth interviews among the three most important groups of stakeholders: customers, workers, and suppliers to understand their views about service delivery and value co-creation. Findings document bureaucratic inertia, resource limitation, and a huge organizational structure that diminishes agility. Workers are resistant to change because of colonial-era HR practices, whereas customers and suppliers view relationships dyadically. Operational inefficiencies, delay, and inadequate coordination further impede adoption. The research suggests reorganization, technology investment, cultural change program, and enhanced operational coordination for value co-creation and service delivery throughout the supply chain.

| **KEYWORDS** | Service-Dominant Logic, Value Co-creation, Pakistan Railways, Supply Chain |

Introduction

In contemporary business and marketing, there is a growing recognition of the need to move beyond traditional Goods-Dominant (G-D) Logic, which put emphasis on tangible products and transactional exchanges commonly termed as operand resources. Instead, the focus is shifting towards Service-Dominant (S-D) Logic, which posits that service is the fundamental basis of economic exchange and that value is co-created through interactions between service providers and consumers (Vargo & Lusch, 2004). This paradigm shift is particularly relevant for PSOs, which often struggle with rigid structures, bureaucratic processes, and a lack of customer orientation in the third world. The governance model and knowledge based systems have been adopted by the first world in order to improve government-citizen relationship thus moving towards citizen-centric models of PS. The roots of this shift are in the foundation of knowledge based systems. One major source of influence on this approach to the creation and application of operant resources or knowledge was (Nonaka, 1994). Introduced by Vargo and Lusch (2004), S-D Logic accentuates connections, value co-creation, and intangible resources to question the conventional wisdom. Within this approach, goods are viewed not as the ultimate objective, but rather as tools for delivering services. This viewpoint is in line with contemporary service-based economies, where value is increasingly produced from immaterial resources like connections, experiences, and knowledge (Lusch & Vargo, 2006).

Shifting from G-D logic to S-D Logic is a strategic decision and requires detailed deliberations with all the stakeholders whether internal or external. The shift is drastic in nature and so complex that many organizations have not even realized the practical shift in the service sector, especially after the second millennium and in particular in the Post-Covid world. The adverse impact is on the third world countries having old and obsolete traditional style of working inherent with numerous problems and legacy system patched with adhoc policies and short –term procedures instead of a major overhaul of the system or long term strategic decision making. This short sightedness results in losses on account of competitive advantage based on novel strategies adopted by similar sectors and organizations. The problem is typically prevalent in the PSOs and needs remedial measure to break the organizational inertia and revamp the existing systems to improve the overall, efficiency, and effectiveness of the system. S-D logic as the name indicates; needs to be adopted in the Service sector without any exception due to its utility and foundation premise of exchange of service, as the source of competitive advantage. The strategic shift towards adoption of S-D logic is considered imperative for value co-creation with the help of customers.

Ali et al., (2020) have deliberated on the issue of impact of the value co-creation with the help of customers and the hurdles faced on said account by the Pakistani Police Force. The model of policing has changed globally and so are the requirements of the sector, thus indicating the need of application of S-D logic. PR is also considered as a service provider. It provides logistics service (freight + passengers) to masses. Moreover, it is also considered as a backbone of national defense in terms of mass movement of troops during war like situations. The organization is declared a state within a state due to its enormous size and involved sub-departments namely civil engineering, mechanical engineering, telecom engineering, signaling systems, electrical engineering, Information Technology, marketing, manufacturing, maintenance, dry ports etc. Besides, the organization is geographically distributed throughout the country with its own police, accounts, hospitals, schools, colleges and stadiums etc. The system has been inherited from the colonial era and organizational culture and inertia is too strong to bring a radical change instantly. As the whole PR setup works under the PS umbrella duly funded with the tax payer's money, hence the massive losses generated by the organization are a matter of great concern for the government as well as the citizens. Moreover, the lack of satisfaction of the customers (passengers, general public and freight service receivers) is a burning issue and fuels the already disruptive organizations' performance and governance issues. The internal stakeholder (employees) strive for improving operational efficiency and effectiveness for the betterment of the organization but it is more focused towards compliance based system duly observing the adherence towards bureaucratic style of working without involving external stakeholders (customers and suppliers) in the true sense. This devoid, in turn creates misaligned and dysfunctional approach which completely misses the holistic picture. The application of S-D logic initiates with the realization of utility of multiple actors in the ecosystem or supply chain (SC) as co-creators of value in order to generate a competitive advantage for the organization in addition to the benefits of improved stakeholder satisfaction, increased efficiency, and improved service delivery (Grönroos, 2011). In fact the society has to play its role as one of the actors towards the success of the organization. Another factor contributing to the decay is the traditional G-D logic based mindset of targeting material possessions (operand resources) and unilateral transactional exchange of primary focus while demeaning the implications of customer requirements and service quality (Ahmed, 2019). Furthermore, the organization lacks to appreciate the value of its internal stakeholders (operant resources); a common practice in the PS. The result in loss of skills and tacit knowledge exchange in addition to demotivation and generation of a non-conducive environment.

The study aims to examine the barriers and challenges towards adoption of S-D logic specifically in PR and Pakistani PS in general. The models developed tried to encompass the dynamic nature of the organization in the milieu of SC and an ecosystem based on S-D logic

while trying to address the identified challenges and barriers. The multi-actor model including internal stakeholders (employees) and external stakeholders (suppliers and customers) offers a more holistic picture while integrating the common challenges of all three stakeholders. Another rationale for taking up this study is the lesser focus on the PS in terms of research as compared to the private sector. This results in a gap and warrants a shift to apply research based solutions in the PS in order to make it a thriving sector instead of an ailing entity of the economy and the country. The result will be decision making based on input from all stakeholders, which in turn will result in formation of citizen-centric public policies established on service orientation, better public service delivery and value-driven systems.

Literature Review

S-D Logic: An Overview

Vargo and Lusch (2004) introduced a revolutionary philosophy namely S-D logic challenging the traditionally engraved centuries old G-D logic, which dominates the Service Sector due to its application and fundamental premises. S-D logic claims the superiority of utilization of operant resources including knowledge and skills over the traditional tangible resources or exchange of goods. In contrast, G-D Logic focuses on tangible products and transactions. S-D Logic suggests that value is co-created through interactions between service providers and consumers rather than being embedded in the products themselves. S-D Logic, posits that service is the basis of all economic exchange, emphasizing value co-creation between service providers and customers (Vargo and Akaka, 2009). According to them, S-D Logic views goods as distribution mechanisms for service provision. They also claimed that S-D logic is the foundation of Service Science and an emerging field which is in its development stages. The roots of the both S-D logic and Service Science can be considered as Nonaka's innovative shift from traditional tangible exchange of goods or operand resources towards intangible exchange of resources or operant resources namely knowledge thus developing the field of knowledge management (Nonaka, 1994). Vargo and Lusch (2004) have further developed the concept and declared the whole concept as a separate science and named it as Service Science. They have also conceptualized it as a shift from G-D logic to S-D Logic. Smith's 1776 traditional marketing model was based on exchange of tangible goods (Vargo and Akaka, 2009). The contemporary view has a paradigm shift and considers core values of exchange of intangible resources, value co-creation, and relationships or networks. Co-creation of value is a vibrant concept which underlined the role of customers. (Vargo and Lusch 2004).
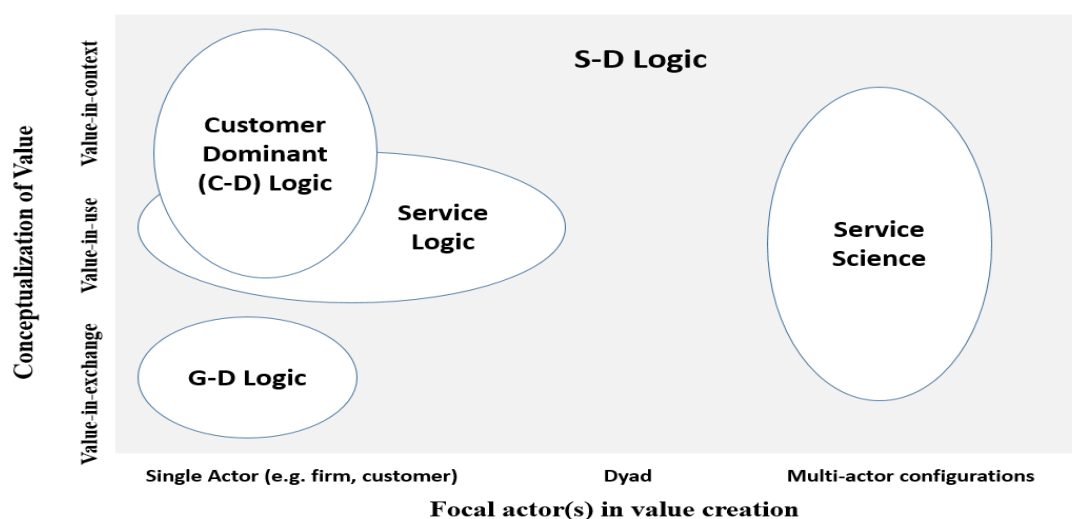

Figure 1: S-D logic ecosystem and environment Source: Vargo, Koskela-Huotari, and Vink, (2020)

Key Principles of S-D Logic

S-D Logic is built on several foundation principles that distinguish it from G-D Logic. All economies are essentially service economies. Even when goods are involved, they are merely vehicles for service provision (Vargo & Lusch, 2004). Value is not created by the provider alone but through the collaborative processes involving the customer and other stakeholders (Grönroos, 2011). Customers are active participants in the creation of value, rather than passive recipients of goods and services (Prahalad & Ramaswamy, 2004). They have also given the DART model based on Dialogue, Access, Risk-benefit and Transparency, which revolves around co-creation of value in the PS. The same model was later used by Rodrigues et. al. (2021).
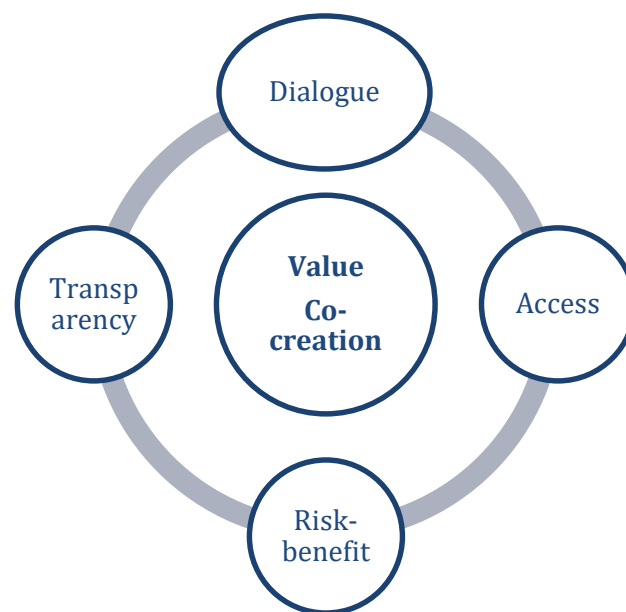

Figure 2: The DART Model Source: Rodrigues et al., (2021)

However, the above relationship is dyadic in nature whereas the application of S-D logic requires implementation of DART model at SC level thus generating a unique ecosystem. As, relationships and interactions are dominant in value creation and value co-creation, highlighting the importance of long-term engagements over short-term transactions (Lusch & Vargo, 2006). They assigned customer or consumer of these goods, an equally imperative role in the processes of value creation and value co-creation. This value creation and value co-creation is through collaborative efforts of firm and the customers, thus making customers an active participant towards value creation instead of passive element in the whole process. They have indicated the requirement and applicability of vibrant nature of cultivating long term relationship with customers instead of a simple one-time transactional relationship. Today the word of mouth by the consumers or customers holds imperative value in marketing. The same is evident from the Japanese products. In spite of being considered the best quality products, there is no mention of quality in the marketing of Japanese products. This indicates that customer perception and experience holds more value than traditional marketing gimmicks and techniques. They are also of the view that goods and services may be integrated in order to develop a comprehensive framework of marketing. The inclusion of the services in the definition of product is another evidence of the strength of the idea. The product is now defined as goods and services instead of the tradition view of goods only. This gives a holistic picture to the concept of product and indicates the chemistry of the two. There are numerous examples of successful application of the concepts into practice. The customer loyalty program giving rewards to regular customers is one of the successful application of the concept. Vargo and Lusch (2016), have also proposed a conceptual framework. The said framework is much

more powerful and contains the SC view mentioning different actors involved and taking into account Service Ecosystem along with Institutions and Institutional arrangements. Despite its comprehensiveness the details as mentioned in DART are equally important and cannot be ignored. The model is illustrated as under:
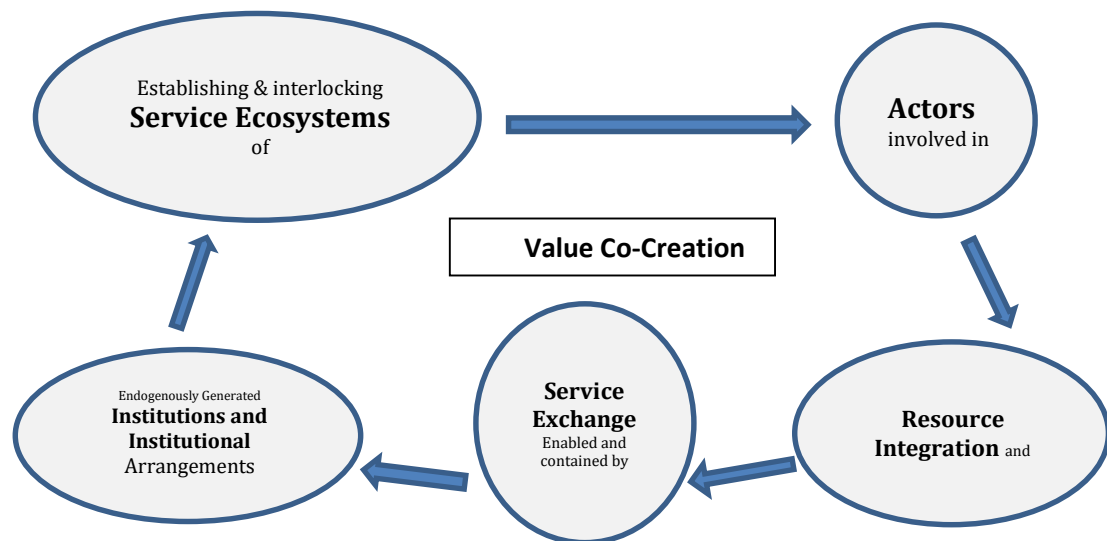

Figure 3: Vargo-Lusch Model Source: Vargo and Lusch (2016) Source: Vargo and Lusch (2016)

S-D Logic in the Service Sector

As the name indicates Service sector typically focusses the exchange of services or intangible operant resources. These resources lies in the form of knowledge and skills acquired as well as developed by individuals. Thus adoption of S-D logic in the Service sector is imperative in the milieu of enhanced service delivery and customer satisfaction. S-D logic framework provides a better understanding and improved results in dyadic or multi-actor relationships which includes interaction with the customer (McColl-Kennedy et al., 2012). They have highlighted the effective utilization of S-D logic in the health sector. In health sector, patients are traditionally considered as customers or service receivers with a unidirectional relationship of doctor providing service as service provider to patient receiving service as service receiver. However, they consider the patients as partners and part of the value co-creation process. Patient(s) engagement, willingness, self-determination and attitude towards their health plays pivotal role through active participation and in turn generating a positive overall health outcome (McColl-Kennedy et al., 2012).

Ng & Forbes (2009) applied the S-D logic in the education sector which is also believed to be working on dyadic relationship of unilateral flow of knowledge and/or skills from teacher (resource person) to students (receiver/participant). They have argued that students are the value co-creators through their active participation and interest results in enhanced learning experience equally beneficial for the teacher and students. The relationship can be considered as bilateral and exchange of knowledge results in value co-creation on both ends. Society plays its own role and multi-actor philosophy of Vargo and Lusch (2016) is equally applicable in the dynamic Value co-creation.

Shaw et al., (2011) have explored the benefits of S-D logic in hospitality and tourism industry. Both industries target creation of cherished memories and customer experience as well as customer retention. The target can only be achieved through customer satisfaction and thereafter creating customer loyalty. The co-creation of value in the industry is not possible without the active participation and repeated feedback from the customers and the same duly incorporated in the policies and services provided by the industry.

S-D Logic in the Public Sector

Public Sector (PS) is traditionally believed to be a Service Sector, providing different services to the public. The primary focus of the PS is improved Service delivery, and good governance. Hence, the key performance indicator or the success of PS is measured in terms of citizen satisfaction and trust in the offered services. Other than military, health, transport, and education are considered as the primary services provided in different forms to the citizens. Considering the sector requirement, the adoption and application of S-D logic assures positive results in terms of better service delivery and customer (citizen) satisfaction. Bate & Robert (2006) have discussed the application of S-D logic in UK's health care system. They have recognized the patient-centric initiatives in the National Health Service (NHS) of UK to c-create value through shared decision making. Wyman, (2013) has focused value co-creation through application of S-D logic in the transport sector typically focusing Transport for London (TfL). He pointed out the co-creation of value using feedback system from the customers using technology in order to explore customer (passengers) experiences. Bart and Tagg (1995) have emphasized the collaborative learning and participation by the students for the improvement or success of the educational sector. They have addressed the public education system and discussed the value co-creation in community colleges and public universities thus indicating the applicability of S-D logic in the education sector.

S-D Logic in Pakistan Railway

In general, Railways across the globe is considered as a service whether in the form of freight or passenger. The terminology used to define the type of organization is Logistics Service Provider (LSP). Railways generally works under the PS around the world due to number of reasons. The working in the PS further gives it a unique dimension of governance and a public service or utility instead of a traditional profit based organization. Wolmer, (2002) has discussed at length the ills of privatization of the British Railways, thus validating the requirement of managing Railways under PS instead of private sector. Hodge and Coghill (as cited in Callender, 2011, p. 13) labeled SC of PS to be a complex network. Broad (2006) explored the complex nature of Railways. He considered a State owned Railways as a complex organization. Sears, et al., (2022) have carried out a research on Canadian Railways. They used the method of grounded theory in order to examine the issues, problems and obstructions in goods movement. As per their research, the Canadian Railways also works under the PS. Keseru, Coosemans, and Macharis, (2021) have focused the future transport direction of Europe while using Stakeholders' preferences. The have focused the participatory evaluation of various scenarios using Multi-Actor Multi-Criteria (MAMC) analysis.

As, Railways have a history of customer retention instead of single transaction, thus validating the argument forwarded by Vargo and Lusch, (2004) of value co-creation under S-D logic is not only relevant but most suitable solution under the existing circumstances. The concept has been applied through the 7 P model i.e. "*Product, Price, Place, Promotion, People, Process and Physical Evidence,*" in Vietnam Railways freight sector (Do & Vu, 2020). Being an organization belonging to the third world PS, Pakistan Railway (PR) inherited colonial mindset, without significant evolution, plagued with inefficiencies, massive losses, decaying infrastructure, lack of resources and decayed system of governance. PR is having a multifaceted problems which indicate unique challenge to be addressed. The complexity further increases as it includes several types of expertise including civil engineering, mechanical engineering, telecom engineering, electrical engineering, finance, IT, marketing, manufacturing, maintenance, security etc. all working simultaneously and in harmony. Moreover, the internal and external stakeholders also need to align in order to produce the optimal results. The above situation, thus creates a unique complexity and fulfills the requirement of a case study research.

Challenges in S-D Logic Adoption

Some barriers and challenges have been identified during the literature review. However, the same were examined till formulation of results and that too just to cross-reference the in-depth interview's inferences. This has been done in order to prevent the development of any biases while conduction this research. The major barrier is the change management and traditional as well as bureaucratic style of working in organizations. Besides organizational inertia and lack of customer-centric approach are some other major challenges faced in the adoption of S-D logic (Lusch & Vargo, 2006; Grönroos, 2011). Lusch et al., (2007) have also considered organizational inertia as a fundamental barrier towards adoption of S-D logic. This includes institutional memory, resistance to change and embedded work culture of the organization. The employees' tacit knowledge also acts as a barrier instead of way forward, as they are familiar with G-D logic and routinely applying it. There is fear of the unknown (moving outside the comfort zone), and apprehensions in terms of job security (Hartline et al., 2000). Zeithaml et al., (2017) have discussed the resource constraint in the PSOs which in turn results in negligible or low investment in technology, trainings and infrastructure. The outcome of this resource constraint manifests in the form of non-adoption of S-D logic. Payne et al., (2008) consider the dynamic nature of value co-creation as a massive challenge. They believe that the same cannot be measured through traditional performance measurement systems and organizations believe that before development of an appropriate Performance Measurement System for measuring the collaborative, and dynamic aspect of value co-creation; S-D logic implementation is an arduous task.

Challenges in S-D Logic Adoption in Public Sector

Zhou et al., (2014) have specified the dominance of service sector as a driver of economy and GDP over the traditional fields and sectors whether related to manufacturing or agriculture. This tilt in favor of service sector in turn requires employing operant resources and declare them as superior to operand resources. The dominance of service sector further demands a specific setting and ecosystem to address the sector needs. This need or gap of the sector is addressed by S-D logic, giving service principal role in the process of value creation and exchange of service as a foundation principle of the sector instead of exchange of goods based on traditional G-D logic. Kowalkowski, (2010) has highlighted the adoption of S-D logic in PSOs as a crucial area of research. They believed that the area is not only significant but also needs to be focused. Miles, (2014) have accentuated the application of customer-centric, collaborative and value co-creation approach in line with the foundation premises of S-D logic. The challenges faced by the PSOs include; bureaucratic mindset, resource limitations, political influences, policy constraints and organizational and cultural values which are defined as Institutions and Institutional Arrangements by Vargo and Lusch, (2016). Despite many benefits and requirements for the adoption of S-D logic in PSOs, the practical adoption process remained sluggish due to above mentioned and many other unidentified barriers and challenges.

Methodology

Qualitative research method is used, as it provides the necessary foundation for a thorough understanding of the complex elements impelling S-D logic adoption within the PS. The case study approach has been adopted keeping in view the effectiveness of its application in exploring complex phenomena in real-life context (Yin, 2014).

Hence, keeping in view the requirements of the study, case study research was adopted and the protocols of case study were followed as defined by Yin, (2014). According to him there are five conditions for Single Case Study namely: Critical Test of Existing Theory, a rare/unique circumstance, a representative/typical case, revelatory purpose, and longitudinal purpose. The case study is of Type II i.e. Single case study. Yin, 2014 has defined

the validity of single case study based on three measure i.e. construct validity, internal validity and external validity. The construct validity was ensured by obtaining evidence from multiple sources including internal and external stakeholders, thereafter maintain a chain of evidence and finally review by the key stakeholders (internal) of the draft report. Internal validity was ensured by instituting pattern matching and causal relationships. Being a single case study, external validity (generalizability) was not obtained in the current study, thus it can be considered as a research limitation. Yin (2014) further explained single case study research protocol to include, purpose, problem, related reading (in this case literature review, archival records, organizational documents, personal insights), and interviews and a final outcome in the form of an extensive research report. Besides case study protocols of Yin, Interview protocols and reporting protocols were also observed. The interviews were based on semi-structured open ended questions. The responses were in written form, thus evading any communication errors, and final outcome again revalidated by internal stakeholders to increase validity. The reporting protocol include confidentiality, and participation as per informed consent of the participants.

Data Collection

The data was collected through non-probabilistic snowball, purposive and convenience sampling techniques, due to number of reasons. The foremost is the difficulty of information availability from the PS due to fear of repercussions or adverse reaction. Secondly, the level of understanding of an individual participant to have an idea and thus translate his response appropriately in order to be of value instead of a random or inadequate response which in turn will further aggravate the problem instead of resolving it. Thus the role of researcher being part of the organization for over a decade was critical in data collection, participants' selection, archival record analysis, and data analysis to finalize the research outcomes. However this can also be considered as a researcher's bias. The same bias was eliminated by the inferences of co-author. Walker and Brammer (2009), used the snowball sampling in the UK Public Sector Supply Chain.

In total ten interviews were conducted six from external stakeholders and four from internal stakeholder. The external stakeholders were further divided into suppliers/vendors and customers or passengers. Two suppliers and four customers were selected. The suppliers are not the biggest stakeholders and are considered as around 20 percent part of the SC if segregated into suppliers, employees and customers. 40 percent part or four interviews were conducted from the employees and 40 percent or four interviews from the customers. The above division is based on the roles of the three entities within the SC. The internal participants were taken from the SC department as they interact with all the internal stakeholders in addition to suppliers, thus having a deeper and holistic picture of the organization as well as of suppliers. Three of the participants were reluctant in participating in the study and alternates were selected utilizing the same sampling techniques. This refusal also validated the assumptions and correctness of sampling techniques used. The interview questions were carefully designed and reviewed multiple times, keeping in mind the need for effective development and revival of PR (Hernández, Méndez, Mendoza, & Cuevas, 2017). A total of six questions were finalized for the customers (external stakeholders), ten for the employees (internal stakeholders) and twelve for suppliers (external stakeholders). The questions were revalidated by the customers and internal stakeholders (employees) before conducting the interviews.

Data Analysis

Thematic analysis was carried out to process, synthesize, and analyze the subjective data received. The reliance has been made on the techniques elaborated by Peterson in 2017. He has used Discourse with a capital "D" for the analysis of power structures along with conventional content analysis. The themes were thus interpreted within the case and across the cases. For within the case analysis, the themes are divided into three cases i.e.

Suppliers (external stakeholder), Employees (internal stakeholders), and Customers (external stakeholder), whereas the "across the case' analysis is based on a SC view of PR. Ayres, Kavanaugh, & Knafl, (2003) has used the same technique of Within-Case and Across-Case approaches of Qualitative Data analysis in the UK health sector which also operates in the PS. Sears, et al. (2022) have applied grounded theory to investigate the barriers to the movement of goods in Canadian Railways which also works under the PS. Hence, the themes are further reviewed, analyzed, processed, examined and developed through application of grounded theory. Data triangulation through literature review, in-depth interviews, department documents/archival records were used in order to validate the results.

Results and Discussion

With-in Case Analysis Suppliers

The suppliers consider working with PR challenging due to number of reasons. The most common reason of the suppliers' discontent is the delay in payments. The same is due to the financial health of the organization which is clearly in-line with the poor financial health of the federal government. The challenge can be addressed through development of a national transport policy with focus on developing the national asset namely PR in line with other countries. The progress of China and India is believed to be backed by their efficient and robust transport model with key focus on Railways. In this regard, special funding can be arranged from the provinces who have been allocated ample funds after the 18th constitutional amendment. Moreover, Public Private Partnership (PPP) mode and Foreign Direct Investment (FDI) are some other modes of addressing the issue. Revenue increase through better organizational management is another solution to the problem. All the above interventions require application of S-D Logic.

The bureaucratic mindset, slow cumbersome processes, delayed responses and unclear communication instead of a collaborative and inclusive approach falls under the same category of poor governance, vague policies and Anti-Lean practices. The massive amount of procedures and involvement of multiple tiers make the system slow. These are the results of lack of application of S-D logic and can be considered as challenges towards adoption of S-D logic. Development and adoption of Lean and Agile practices along with robust human resource development mechanism, analyzing the requirements of suppliers, delegation of powers to lower tiers and empowering them while clearly authorizing the direct communication channel of the supplier with the relevant employee duly recorded in written form will drastically change the whole landscape. Long term contracts and strategic sourcing are some of the other solutions which also require a profound understanding of S-D logic. The issue of lack of transparency is a major concern and after the advent of Public Procurement Regulatory Authority Rules commonly known as PPRA rules in 2004, which are applicable to all the PS of the country whether provincial or federal is a matter of great concern and needs to be further evaluated as to the correctness of the claim. Furthermore, after the advent of Electronic Procurement and Disposal System (EPADS) in 2024 which is an electronic procurement system and legal binding for all the PS procuring agencies, developed by PPRA, the issue of transparency has been addressed. However, it will take some time to absorb the new system and accept the change in terms of transparency. It is noteworthy that there is no official drive on part of the suppliers to bring a positive change which itself requires to be addressed through application of a S-D logic mindset and inculcating values in suppliers and PR employees.

With-in Case Analysis Employees (Middle tier management)

The thematic analysis within the case shows a better understanding of S-D logic at middle tier management. Archival records, organizational documents and procedures also indicate a preliminary level of understanding of S-D logic and its utility. However, a comprehensive view and its potential benefits are some of the missing elements. Moreover,

the understanding of lower tiers or the employees working in lower ranks needs to be inculcated with the same concept and its utilization as well as efficacy for the system. The employees describe their roles and responsibilities focusing efficient and effective rail services, highlighting the factors of safety, punctuality, reliability and enhanced passenger experience. The first lesson taught at the PR training academy, Walton is, "Customer is the king". It shows the level of commitment inculcated by the organization in its employees. Despite, all this cultural and societal hierarchies and dichotomies along with the colonial inheritance of the system dominates the employee mindset when in field taking decisions and routine working. With the same resources, the organization has increased its profit significantly by focusing the type of passengers it carries and changing the composition of the different class capacities. Similarly, some of the routes or marketing as well as services of trains have been outsourced through PPP mode generating better revenues and increased customer experience. This clear indicates and signifies the role of appropriate application of the S-D logic.

Resource integration and collaboration with outside organizations were also discussed. A maintenance contract with the Chinese firm for ZCU 20/30 locomotives is one of the examples. Similarly, long term fuel dispensing unit contract with Pakistan State Oil (State Owned Oil Company) and some other direct contracts with international manufacturers are steps towards integration of organization with its suppliers. On the other end triple helix project is underway for human resource development and linkage with academia is also explored at various possible avenues. Implementation of an ERP system (world renowned SAP) is another step towards digitalization, better communication within the organization, transparency, and record keeping for data analytics to improve and devise a robust mechanism for S-D logic deployment. However, the lexicon, concepts, terminologies and fundamental premises have to be developed in order to advance the understanding of S-D logic.

The major barriers acknowledged by the employees include resistance to change, uncertain future of the organization including employees, and bureaucratic system whereas the challenges identified by the employees include organizational culture, human resource capabilities, non-delegation of powers, and traditional mindset. All these barriers and challenges can be considered as purely embedded in operant resources. However in order to address these challenges, measures can be taken through application, adoption and/or adopting of private sector best practices including principles of Lean and Agile, market competitive salaries, regular refresher courses and using Knowledge Management and S-D logic strategies. The SC view of the organization taking suppliers and customers as partners instead of rivals will also help in development of conducive organizational culture and healthier ecosystem to foster S-D logic and in turn generate competitive advantage.

With-in Case Analysis Customers (Passengers)

The customers reported service quality and consistency as the two most common and primary issues. The general perception is of moderately satisfied to somewhat dissatisfied. The noteworthy observation is the unanimous target of service quality and consistency among the employees and the customers (passengers). Furthermore, timeliness, reliability, and complains related to cleanliness and hygiene are considered as major challenges. The outsourced trains under PPP mode have addressed some of these issues, however a comprehensive plan to treat the challenges and barriers faced by the passengers to change their mindset and shift their focus to PR are yet to be realized. If both are striving for the same and have a clear understanding the problem lies somewhere else. The expected service delivery by the customers is in comparison to Europe or Japan, whereas the tickets and price comparison was neither discussed nor focused by the customers. Besides the passengers seeks booking convenience. At present, online booking is available with PR, but the same has apparently not been publicized enough to get the attention of general public. Besides the RABTA application integrating different services (On

the concept of: From door to door) is also under development based on the same notion of providing best service to the customers. The procurement of state of the art parlor cars along with Transfer of Technology (TOT) is another step towards customer facilitation. Despite all these measures, either the concept is not fully grasped as an ecosystem or as a supply Chain considering each entity whether internal stakeholder or external stakeholder as part of the whole system thus there is a dire need of having the holistic picture instead of working in silos. It includes development of a system based on S-D logic, however it shall also take into account the concepts and requirements of G-D logic.

Across the cases Analysis

Across the case analysis shows some common themes emerging from the study. The same are outlined as under:

Table 1
Across the case analysis of issues/challenges as perceived by various stakeholders of PR SC

Suppliers	Employees	Customers
Lean, agile and efficient/fast processing	Organizational Inertia / Organizational Transformation	Service Quality including Cleanliness, Hygiene, Seating comfort, amenities and Booking Convenience etc
Timely Response, Payments, and communication	Human Capital Development	Consistency
	Bureaucratic and colonial working style	
	Stakeholder collaboration	
	Resource Constraint	
	Data Driven Decision Making	
	Transparency	

Note: Prepared by Abdus Salam, M. and Sadaqat, S. (2024)

Proposed Model

We propose the integration of three models presented in the figure 1, figure 2 and figure 3 of the paper to develop a new model. This model includes a modified version of DART namely DARTTM where D is for Dialogue, A is for Access, R is for Risk-Benefit, T is for Transparency and TM is for Technology Management. The DARTTM is applied at each step of figure 3 to generate and analyze the value creation step individually. Thus creating the new model as mentioned in figure 4 below. Thereafter, figure 4 process is repeated separately for G-D logic, C-D logic, Service Science and S-D logic in order to address the complex and multifaceted problem of value creation in the PS and having a holistic picture to overcome the barriers and challenges of the PS SC of a third world including PR.
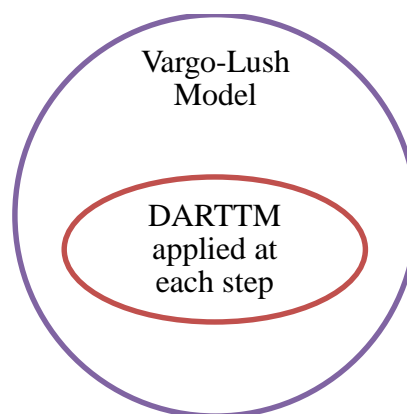

Figure 4: Revised Vargo-Lusch Model Note: Prepared by Abdus Salam, M. and Sadaqat, S. (2024)
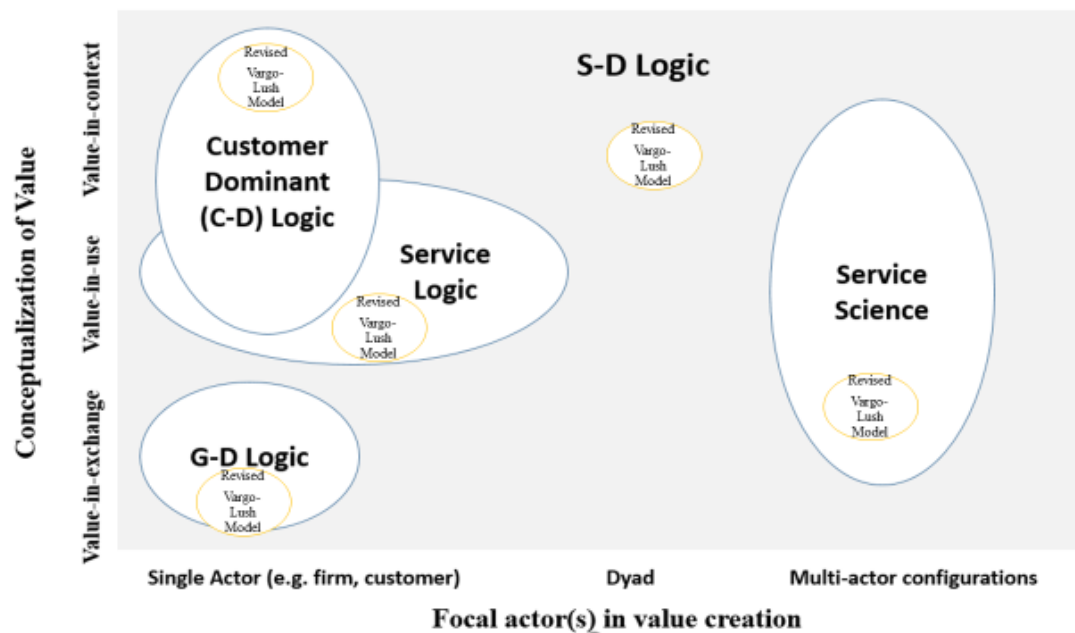
Figure 5: Proposed Value Co-Creation Model for PS SC Note: Prepared by Abdus Salam, M. and Sadaqat, S. (2024)

Conclusion

The PS of the third world is plagued with multifaceted constraints, barriers and challenges. The same holds good large organizations like PR. The complexity further increases manifolds when SC perspective is taken into account. The major constraints and barriers include resource constraints, old and obsolete colonial working style, bureaucratic culture, lack of information technology tools, strategic misalignment with the sector and rifts between internal as well as external stakeholders. The human resource development needs serious considerations in addition to employability of novel concepts like S-D logic. Although, S-D logic is being applied in the PR in isolated manner at several places at a preliminary level, however the holistic picture is missing. Moreover, the relationship in most cases is dyadic in nature instead of configuring it to a multi-actor and multi-level relationship. The increased revenues during the year 2024 by employing operant resources and changing the organization style of working clearly indicates the massive room of improvement through the application of S-D logic. In order to develop and implement the S-D logic across the SC, radical measures are required. At the initial stage, it requires revamping the organizational structure, processes, human resource development model, and organizational culture through application and adaptation of international best practices and tailoring them as per organizational requirement. Subsequently, the adoption and development of S-D logic based ecosystem using the proposed model mentioned in figure 5. At the final stage, the whole S-D logic based framework needs to be deployed across the value chain duly equipped with feedback control system for fine tuning the system in order to keep the dynamic and multifaceted nature of the SC continuously revised and updated.

Recommendations

In order to promote the shift towards Service-Dominant (S-D) Logic in Pakistan Railways, there needs to be a broad-based transformation. This involves restricting the organization to diminish bureaucratic sluggishness, digital investment in the likes of ERP and e-procurement for transparency, and initiatives for cultural change to address colonial-era hierarchies and change resistance. The relationships with suppliers can be made stronger by long-term contracts, strategic sourcing, and PPP/FDI models, and employees

should be empowered by delegated authority, competitive HR practices, and ongoing training. Customer experience needs to be enhanced by service quality improvement, promptness, cleanliness, and ease of booking, with integrated applications such as RABTA. Overall, embracing Lean and Agile principles, reinforcing collaboration with industry and academia, and instilling value co-creation along the supply chain will empower PR to achieve sustainable efficiency, innovation, and competitiveness.

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